

REMARKS

Claims 1-23 are all the claims pending in the present Application.

Claim Rejections Under 35 U.S.C. § 102

Claims 1-3, 12, and 13

Claims 1-3, 12, and 13 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent 5,822,451 (Spaulding et al., hereinafter Spaulding). Applicant traverses this rejection for at least the following reasons.

The Examiner contends that Spaulding teaches “a mask generator that receives a respective stored mask threshold value corresponding to the address from the mask memory and generates a respective mask threshold value for each of a plurality of color channels,” as required by claim 1.

Regarding this element of claim 1, the Examiner cites Spaulding at col. 4, lines 16-22, which states that “[t]he dither matrix column and row addresses are used to address jointly optimized dither matrices 44A, 44B, and 44C which are jointly optimized according to the present invention for the cyan, magenta and yellow color channels to determine cyan, magenta, and yellow dither values . . . , respectively.”

Although this portion of Spaulding does appear to describe the use of different dither matrices for cyan, magenta, and yellow color channels, it does not describe receiving a “stored mask threshold value” for “one color channel,” and generating “a respective mask threshold value for each of a plurality of color channels.”

This discrepancy may be clarified by reference to Fig. 4 of Spaulding in comparison with Fig. 9 of the present disclosure, which shows a non-limiting exemplary embodiment of the

present invention. As may be clearly seen in the figures, the embodiment depicted in Fig. 9 of the present disclosure shows that the Mask Generator 940 receives a single input (a threshold value for one color), and generates threshold values for each of Red, Blue, and Green colors. In contrast, Fig. 4 of Spaulding shows components which take coordinate values for a dither matrix for one color channel, and generate a threshold value for one color. Nowhere does Spaulding appear to disclose any component which takes a threshold value for one color and generates mask threshold values for a plurality of color channels.

Thus, Spaulding fails to disclose any element that corresponds to the “mask generator” of claim 1; Spaulding, therefore, fails to anticipate claim 1. Accordingly, Applicant respectfully requests that the Examiner withdraw the rejection of claim 1 and its dependent claims 2 and 3.

As claims 12 and 13 recite features similar to those of claims 1-3, claims 12 and 13 are also patentable for reasons analogous to those presented above with respect to claims 1-3. Accordingly, Applicant respectfully requests that the Examiner withdraw the rejection of claims 12 and 13.

Claims 9-11, 19-21 and 23

Claims 9-11, 19-21 and 23 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent 5,768,411 (Shu et al., hereinafter Shu). Applicant traverses this rejection for at least the following reasons.

Regarding the requirement of claim 9 of “a mask information input unit that receives mask information for one color channel generated by a predetermined algorithm,” Shu discusses a cyan matrix, but fails to discuss any “predetermined algorithm” by which it is generated.

Regarding the requirement of “an offset calculator that calculates a predetermined offset,” the cited portion of Shu describes “simply adding half the color component range to corresponding values of the cyan matrix,” or “adding one-third and two-thirds, respectively, of the pixel-component-value range to corresponding elements of the cyan matrix,” which the Examiner appears to consider as applying offsets; however, this portion of Shu fails to describe “an offset calculator,” as required by claim 9. Furthermore, claim 9 requires that the “offset calculator calculates a predetermined offset.” Although various fractional amounts such as “half,” “one-third,” and “two-thirds,” are described, Shu fails to disclose any calculator or calculation with respect to these fractional amounts.

Finally, the cited portion of Shu fails to disclose “a mask calculator that calculates masks for a plurality of channels using information on the predetermined offset calculated by the offset calculator. In particular, according to the cited portion of Shu, any matrices based on the cyan matrix apparently may be completely pre-calculated; thus, the hypothetical device disclosed in the cited portion of Shu would not contain any component corresponding to “a mask calculator.”

Thus, Shu fails to disclose each and every element of claim 9 and, therefore, fails to anticipate claim 9. Accordingly, Applicant respectfully requests that the Examiner withdraw the rejection of claim 9 and its dependent claims 10 and 11.

As claims 19-21 and 23 recite features similar to those of claims 9-11, claims 19-21 and 23 are also patentable for reasons analogous to those presented above regarding claims 9-11. Accordingly, Applicant respectfully requests that the Examiner withdraw the rejection of claims 19-21 and 23.

Claim Rejections Under 35 U.S.C. § 103

Claim 22

Claim 22 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Spaulding. Applicant traverses this rejection for at least the following reasons.

As claim 22 recites features similar to those of claim 1, claim 22 is also patentable for reasons analogous to those presented above with respect to claim 1. The arguments of the Examiner, namely that it is allegedly well-known in the art to provide internal ROM or external storage devices, fail to make up for the deficiencies of Spaulding as set forth above. Accordingly, Applicant respectfully requests that the Examiner withdraw this rejection.

Claims 4, 5, 14 and 15

Claims 4, 5, 14 and 15 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Spaulding as applied to claims 2 and 12 above, and further in view of U.S. Patent 6,154,195 (Young et al., hereinafter Young). Applicant traverses this rejection for at least the following reasons.

As claims 4, 5, 14, and 15 depend directly or indirectly from claims 1 and 12, these claims are also patentable for reasons analogous to those presented above with respect to claims 1 and 12. Young fails to make up for the deficiencies of Spaulding, as Young appears to be cited merely for its alleged teaching of “employing a Bayer dither matrix for halftoning image data.” (Office Action at 7.)

Thus, even taken as a whole for what it would have meant to one of ordinary skill in the art at the time of invention, the combination of Spaulding and Young fails to render claims 4, 5, 14, and 15 unpatentable. Accordingly, Applicant respectfully requests that the Examiner withdraw this rejection.

Claims 6-8 and 16-18

Claims 6-8 and 16-18 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Spaulding as applied to claims 1 and 12 above, and further in view of Shu. Applicant traverses this rejection for at least the following reasons.

As claims 6-8 and 16-18 depend directly or indirectly from claims 1 and 12, these claims are also patentable for reasons analogous to those presented above with respect to claims 1 and 12. Shu fails to make up for the deficiencies of Spaulding, as Shu appears to be cited only for its alleged teaching of the additional features of dependent claims 6-8 and 16-18.

Applicant additionally submits that, unlike Spaulding, in which each dither matrix for each color channel needs separate storage for thresholding, claims 1 and 12 recite “a mask generator that receives a respective stored mask threshold value corresponding to the address from the mask memory and generates a respective mask threshold value for each of a plurality of color channels.” Thus, claims 1 and 12 are able to save storage capacity in comparison with Spaulding by generating “mask threshold value[s] for each of a plurality of color channels” from “the mask memory” rather than from multiple separate dither matrices in separate storage, as taught by Spaulding.

Thus, even taken as a whole for what it would have meant to one of ordinary skill in the art at the time of invention, the combination of Spaulding and Shu fails to render claims 6-8 and 16-18 unpatentable. Accordingly, Applicant respectfully requests that the Examiner withdraw this rejection.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

This Application is being filed via the USPTO Electronic Filing System (EFS). Applicants herewith petition the Director of the USPTO to extend the time for reply to the above-identified Office Action for an appropriate length of time if necessary. Any fee due under 37 U.S.C. § 1.17(a) is being paid via the USPTO Electronic Filing System (EFS). The USPTO is also directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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